

## Foreword

The Fourth Assessment Report issued by the Intergovernmental Panel on Climate Change (IPCC) in 2007 states that most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic Green House Gas (GHG) concentrations. The drastic increase in the concentration of GHGs, particularly carbon dioxide (CO<sub>2</sub>), caused directly and indirectly by human activities, is attributed to the fact that the emission of CO<sub>2</sub> into the atmosphere in the process of the mass consumption of fossil fuel, deforestation, etc., significantly surpasses the absorption by the land ecosystem and the oceans. Thus, it is imperative to balance the emission due to human activities and the absorption by the nature, in order to stabilize the climate for the future. In the meantime, however, we, humans, have not grasped, to a sufficient level, the mechanisms of the absorption by land ecosystem and ocean, and the climatological feedback in the carbon cycle involving atmosphere, land ecosystem and ocean. This lack of understanding comprises a substantial part of the uncertainty in predicting future climate change.

The clarification of these problems involves not only an ascertainment of the spatial and temporal variations in the CO<sub>2</sub> emission from human activities but also a calculation of the spatial distribution and temporal variation of CO<sub>2</sub> and also methane (CH<sub>4</sub>), which is the second largest contributor to global warming after CO<sub>2</sub>, and the spatial distribution and temporal variation of the source and sink in land ecosystem and oceans, based on earth observation, and ultimately an attainment of adequate scientific knowledge on the underlying mechanisms. These efforts to observe GHG concentrations and to analyze the causes of their variations at some locations are, though still limited, in progress. On top of these attempts, it is vital to observe the distributions of CO<sub>2</sub>, CH<sub>4</sub>, and other GHG concentrations, which fluctuate both spatially and temporally, on the global scale, using satellite platforms, in a continuous and systematic manner, and to elucidate the current issues, with a goal to elevate the reliability of prediction of future climate change and climate system models effective for assessing the consequences of climate change.

Aiming for fulfilling the above requirements, the Japan Aerospace Exploration Agency (JAXA), the National Institute for Environmental Studies (NIES) and the Ministry of the Environment (MOE) (hereinafter referred to as the “Three Parties” collectively) is jointly promoting the GOSAT (Greenhouse gases Observing SATellite) Project. The Three Parties have revised the application method of the research announcement (hereinafter referred to as the “RA”) made in the past with a view to promote the further use of the GOSAT data and shall start inviting research proposals at anytime from August 2012.

The spacecraft “GOSAT” (IBUKI) was successfully launched on January 23, 2009 and more than three years have passed since GOSAT started its on-orbit operation. In the GOSAT Project, the RA was made for three times, and consequently, numerous research outcomes were achieved by both domestic and abroad RA researchers while high-quality GOSAT data were accumulated. From now on, with the objectives of improving convenience for the RA candidates and enhancing variability and possibility of research outcomes, such as creative research

outcomes from a new point of view are accomplished through the use of GOSAT data by wider range of researchers around the world, the Three Parties shall start inviting applications and research proposals anytime from August 2012. The details of this RA are provided in the following RA documents. Note that the RA Office is set up inside NIES as was in the past.

#### RA Document

GOSAT Research Announcement (main text)

Appendix A	Outlines of GOSAT and TANSO Sensor
Appendix B	GOSAT/TANSO Calibration and Validation Plan and Overview of Processing Algorithms
Appendix C	Operation Policies of GOSAT and Basic Observation Plan of the TANSO Sensor
Appendix D	Contents of Research Proposal and Application Forms
Appendix E	General Contractual Conditions for the Joint Research on the GOSAT data
Appendix F	User Category, Glossary and Abbreviation List

Schedule for the 4<sup>th</sup> RA is shown hereunder as an example of such RA that the Three Parties invite research proposals anytime without setting up the deadline.

Release of the RA	August 31, 2012
Period for research proposal acceptance (The 4 <sup>th</sup> RA)	August 31~ October 26, 2012*
Period for research proposal review (The 4 <sup>th</sup> RA)	August 31~ November 11, 2012
Date of the selection board (The 4 <sup>th</sup> RA)	November 16, 2012
Notification of the selection results	November 30, 2012
Sign up of the agreement	December 3, 2012 or later
Submission of interim reports (The 4 <sup>th</sup> RA)	December 28, 2013

\*Applications and research proposals will be accepted even after October 26, 2012. Schedules of acceptance and selection for following RAs will be posted on the NIES GOSAT Project webpage in an appropriate timing.

For more information, please contact:

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Acceptance time: Weekday (excluding Japanese national holidays) 10:00-17:00

August, 2012

Japan Aerospace Exploration Agency (JAXA)  
National Institute for Environment Studies (NIES)  
Ministry of the Environment (MOE)